REMARKS

Applicant appreciates the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the amendments above and the remarks below.

Non-elected claims

Applicant has cancelled non-elected claims 2-4, without prejudice.

Claim objections

Applicant has amended claim 1 to separate the claim steps and recite the operations positively, as requested by the Examiner.

Rejection under 35 USC § 112, second paragraph

Claim 1 stands rejected under 35 USC 112, second paragraph, for being indefinite. Applicant has deleted the terms "zone" and "layer," and it is believed that this rejection is now obviated.

Rejection under 35 USC § 103

Claim 1 stands rejected under 35 USC § 103 as being obvious from the Dzigiris publication and Powell U.S. Patent No. 2,594,799 in view of Aslanova Russian Patent No. RU 2118300, Wechter U.S. Patent No. 1,912,811 and Kibol Ukraine Patent No. UA 10762. Applicant respectfully traverses this rejection.

The present invention as described in amended claim 1 is directed to an improved method of producing continuous inorganic rock fibers using dacite or rhyodacite rock. One of the cited base references, Dzigiris, discloses the production of basalt fiber from conventional raw materials, and does not disclose use of dacite or rhyodacite. Dzigiris' method achieves fibers lengths that are only several tens of meters

before breakage. This has been found to be due to defects in the produced fiber as a result of non-molten particles in raw material. The applicant has succeeded in determining the main reason of fiber breakage - micro-bubbles of gas in produced basalt fibers. This problem has not been disclosed or suggested in the cited prior art. The applicant has also determined the preferred types of rocks and conditions under which the amount of such bubbles and their size will be minimized.

Unlike the Dzigiris method, the instant method produces fibers from the dacite or rhyodacite rocks. The applicant has found that these particular types of rocks require higher temperatures for fiber formation - temperatures of between 2105 and 2200°C at which at the stage of melt formation a larger amount of gas inclusions are burnt and emitted to atmosphere. By contrast, Dzigiris discloses lower melting temperatures and teaches against overheating because of either boiling effect or boiling-up of separate portions of the melt that results in trapping of micro-bubbles inside the fiber. The prior art Kibol Ukraine patent (by the instant applicant) discloses in Table 2 that an attempt was made to using a melt temperature of 2150°C, but the discussion discloses that the actual melt temperature range should be between 1705°C and 2100°C since Table 2 shows that an undesirable lower tensile strength develops at higher temperature. Thus, the prior art Kibol reference also teaches away from using a melt temperature above 2100°C and does not suggest use of dacite or rhyodacite rocks.

The prior art discloses no advantages on quality of the product obtained by heating the melt up to a temperature over 2100°C and, given the economic cost, effectively teaches against doing so. Contrary to the suggestion in the prior art, the inventor has found that melting the dacite or rhyodacite rocks in particular at a higher temperature of between 2105 and 2200°C makes it possible to remove most gas

inclusions. This melt temperature is also maintained until obtaining an amorphism degree of not less than 96% and isolation of not melted quartzites from the melt rocks. Such temperature ranges using specific dacite or rhyodacite rocks were not disclosed or suggested by the cited prior art, and make it possible to produce high-strength continuous fibers from rocks.

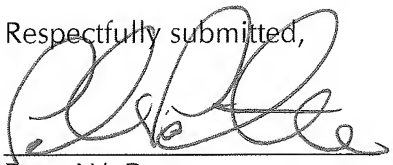
The present invention results in a reduction of the non-molten particles of rock and gas inclusions by providing such conditions when the particles mentioned above are broken and gas inclusions which were formed during the process of rock melting are burnt and emitted to atmosphere instead of forming capsules in the fiber produced. The other base reference, the Powell patent, teaches only crushing of the rock, which does not eliminate the problem of formation and further removal of gas inclusions - gas bubbles. The Powell patent also does not disclose or suggest applicant's use of dacite or rhyodacite rocks or claimed melt temperatures.

The Aslanova and Wechter references do not overcome the deficiencies of the other cited references discussed above, and therefore do not render obvious applicant's claimed invention when included in combination therewith.

Applicant has amended and cancelled claims in this application. Applicant is not conceding in this application that the claims as they stood prior to amendment are not patentable over the art cited by the Examiner, as the present claim amendments and cancellations are only for facilitating expeditious prosecution and allowance of the claims. Applicant respectfully reserves the right to pursue these prior and other claims in one or more continuation and/or divisional patent applications.

It is respectfully submitted that the application has now been brought into a condition where allowance of the entire case is proper. Reconsideration and issuance of a notice of allowance are respectfully solicited.

Respectfully submitted,



Peter W. Peterson
Reg. No. 31,867

DeLIO & PETERSON, LLC
121 Whitney Avenue
New Haven, CT 06510-1241
(203) 787-0595
kibo100001000amdA.doc